KAY-METZELER
EXPERIENCE AND RESEARCH

SAFETY DATA SHEET FOR EXPANDED POLYSTYRENE (EPS)

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier:

Expanded Polystyrene (EPS)

This SDS covers all grades of EPS, KayCel, Claylite, Superplus.

1.2. Relevant identified uses of the substance or mixture and uses advised against

- **Insulation**
- **Void filler**
- **Compressible fill material – for use in reducing the pressure exerted on reinforced concrete ground beams or on the vertical face of concrete foundations, caused by the expansion of clay soils (clay heave).**
- **Packaging**

1.3. Details of the supplier of the safety data sheet

Kay-Metzeler, Brook Street, Chelmsford, Essex, CM1 1UQ

1.4. Emergency telephone number

Tel: 01245 342100
Fax: 01245 342122
Email: epstechnical@vcfuk.com

2 Composition/information on ingredients

2.1. Dangerous Components/ Constituents

Component Name	CAS Number	EINECS	Content	Hazard
Pentane	109-66-0 78-78-4	203-692-4 201-148-8	<1% wt	H220

Euroclass E grades contain <1% polymerized bromide as a flame retardant. A non-hazardous ingredient according to Directives (EC) nr. 1272/2008 and 67/548/EEC en 1999/45/EC.

CAS number for polymer component -900 3-53-6(polystyrene)

vita cellular foams
VITA CELLULAR FOAMS (UK) LTD.

3. Hazards Identification

3.1. Human Health Hazard

EPS is not known to lead to skin irritations
Dust from secondary processing should be suitably controlled and exposure should not exceed 10mg/m^3 8 hours TWA.
EPS is biologically inert.
During hot wire cutting of EPS adequate ventilation is required to extract fumes which may cause irritation to eyes and respiratory tract.

3.2. Most important symptoms and effects, both acute and delayed

No hazards anticipated.

3.3. Safety Hazards

EPS is combustible and therefore:
Smoking should be prohibited in the storage and processing areas
Fire fighting equipment should be readily available.
Work areas require regular housekeeping to ensure the risk of spread of fire is minimised.

4. First-aid measures

4.1. Description of first aid measures

No special precautions necessary.

4.2. Most important symptoms and effects, both acute and delayed

No hazards anticipated.

4.3. Indication of any immediate medical attention and special treatment needed

No special precautions necessary. General hygiene protocols should be adhered too. If irritation were to develop wash affected areas thoroughly with soap & water, seek medical attention if needed.

5. Fire-fighting measures

5.1. Extinguishing media

CO^2
Dry Powder
Foam
Water spray or Sprinkler system

5.2. Special hazards arising from the substance or mixture

When subjected to a constant heat of 230^o c and above, EPS emits inflammable vapours which will easily and quickly ignite.

The melting point is 200^o c and ignition temperature in air 350^o c.

Extreme caution must be exercised when storing, shaping and applying EPS to ensure total protection from flame and/or fire.

5.3. Advice for firefighters

When subjected to fire, EPS produces carbon monoxide which is potentially toxic, though the amount is far less than that given off by wood.
EPS burns with a dense emission of smoke / soot; therefore self-contained breathing apparatus with full face mask & protective clothing should be worn.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Sources of ignition should be kept well clear of product.
Ensure adequate ventilation, particularly when cutting with hot wires.

6.2. Environmental precautions

Do not allow product to enter drains or waterways. Discharge in the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Small amounts of EPS: Sweep / Shovel. Contain small waste off-cut in sealed plastic bags. Dispose of according to local authority guidelines.

7. Handling and storage

7.1. Precautions for safe handling

EPS is a CFC and HCFC free material and is physically and chemically inert.
It contains no known biological or physiological irritant.

7.2. Conditions for safe storage, including any incompatibilities

***A*. Under manufacturer / supplier storage conditions stockpiles must be sited well away and protected from any likely cause of ignition or fire hazard so as not to cause spread, or increase any risk of fire or flame spread, endangering people or animals or contravene any safety standards or regulations relevant to the storage facility or building.**

***B*. Stockpiles of EPS must not create any sort of obstruction or be hazardous to any type of safety equipment; recognised access; exit or gangway.**

***C*. Additionally, under "on site" storage conditions stockpiles of EPS must be at least 20m apart, each containing no more than 60m^3 (approx. 1 tonne) of material.**

***D*. Boards must be stored flat.**

***E*. In high winds ensure EPS material is secured to prevent material from being blown around site.**

***F*. EPS should be kept away from all substances of unknown composition that could contain solvents e.g. paints or adhesive**

7.3. Specific end use(s)

EPS waste can be recycled and Kay-Metzeler should be contacted in the first instance to discuss the suability & options available. Contact our recycling Manager on Tel: 01245 342119
As a last resort EPS can be sent to a landfill site

8. Exposure controls/personal protection

8.1. Control parameters

Ensure adequate ventilation.

Wear breathing protection if dusts are formed when cutting.

Wearing of safety glasses is recommended when cutting or where dust or small particles could be generated.

8.2. Occupational Exposure Standard

Maximum Exposure Limits (MEL)

Component Name	Limit	Value	Unit	Other info.
Pentane	TWA 8hr	600	ppm	ACGIH
Pentane	STEL 15min	750	ppm	ACGIH
Styrene Monomer	TWA 8hr	430	mg/m^3	EH40/00
Styrene Monomer	STEL 15min	1080	mg/m^3	EH40/00

Under normal conditions EPS is physically and chemically stable and whilst the material is non-toxic, it is flammable and precautions must be taken in storing, working and applying the material to ensure protection against ignition.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State	**Cellular Foam**	
Form	**Moulded Blocks or sheets**	
Colour	**(Standard):**	**White**
	(Low lambda):	**Black**
	(Claylite):	**Green**
Density	**8.5-60 kg/m^3**	
Solubility in water	**Not soluble**	
Solubility in other solvents	**Soluble in aromatic, halogenated solvents and ketones**	
Softening Point	**80°C**	
Ignition temperature in air	**350 °C**	

10. Stability and reactivity

10.1. Stability

Stable under normal use

Decomposition commences above 200 °C

10.2. Reactivity

Conditions to avoid: >80°C

Avoid all sources of ignition: sparks, open flame.

Avoid strong sunlight for long periods.

10.3. Chemical stability

Resistance to chemical substances.

Resistant:

Weak acids: - Carbonic / Lactic / Citric.

Gases: - Natural gas / Methane / Propane.

Building materials: - Gypsum / Lime / Sand / Cement / Bitumen.

Not resistant:

Diesel / Fuel *(petrol)* / Sulphuric acid / Acetone / Paint thinners.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

PVC-e.g. Electrical cable insulation-due to the migration properties of the plasticisers in PVC.

10.5. Incompatible materials

Solvents e.g. paints or adhesive / Creosote

Diesel / Heating oil

Petrol

Paint thinners / White spirit

10.6. Hazardous decomposition products

EPS is inert and will not decompose to generate greenhouse gases or degenerate to pollute the air, water or ecosystems.

11. Toxicological information

11.1. Information on toxicological effects

EPS is non toxic and is not irritating to the skin and eyes

12. Ecological information

12.1. Toxicity

Non toxic

12.2. Persistence and degradability

The product is not biodegradable.
This product is essentially insoluble in water.

12.3. Bioaccumulative potential

The product has a low potential for bioaccumulation.

12.4. Mobility in soil

The product is non-biodegradable in soil. There is no evidence of degradation in soil or water.

12.5. Other adverse effects

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13. Disposal considerations

13.1. Waste treatment methods

EPS is recyclable
Scrap expanded polystyrene is not classified as "Notifiable Waste" and may be disposed at suitable land-fill tips.
EPS waste:

European waste catalogue number	**170604**
EWC code	**200301**

14. Transport information

14.1. UN number

2211

14.2. UN proper shipping name

Expanded Polystyrene. (EPS)

14.3. Transport hazard class(es)

Not Regulated.
Not Hazardous.

14.4. Packing group

14.5. Environmental hazards

Not Hazardous.
This product is classed more of a nuisance product due to the possibility of loose EPS bead entering the environment. Good house-keeping should be adhered to at all times. See section 6.3

15. Regulatory information

15.1.	**EC label Name**	**Expanded Polystyrene**
	EUH018	**In use, may form flammable/explosive vapour-air mixture**
	P210	**Keep away from heat/sparks/open flames/hot surfaces. No smoking**

16. Other information

16.1. **Use and Limitations** **Insulation of walls/roofs and floors in buildings. Protection of foundations from clay heave. Civil engineering applications.**

16.2 **This document contains important information to ensure the safe storage, handling and use of the product.**

16.2 **This document supersedes all previous editions.**